

The early government land survey in Minnesota west of the Mississippi River /

THE EARLY GOVERNMENT LAND SURVEY IN MINNESOTA WEST OF THE MISSISSIPPI RIVER.* BY HON. THOMAS SIMPSON.

* Read at the monthly meeting of the Executive Council, December 11, 1899.

SYSTEM OF GOVERNMENT SURVEYS.

Well founded tradition gives to George Washington, the first President of the Republic, the credit of devising the plan for the survey of lands which for nearly a century has been applied to the survey of the public domain of the United States.

This plan or system of surveys has as its unit the square acre; then the section, a mile square, 640 square acres; then the township, six miles square, containing 36 square sections. The townships lying between two consecutive meridians six miles apart constitute a range, and the ranges are numbered from principal meridians both east and west. In each range the townships are numbered both north and south from the principal east and west base line.

For obvious reasons the author of this plan or system of land surveys did not have the occasion for putting the same into practical operation, since each of the thirteen colonies had adopted systems of surveys of the lands granted them by Great Britain, which could not readily be conformed to this system. It was inaugurated and carried out in the survey of lands which have come into the possession of the general government after the adoption of the constitution, known generally as Government Lands, sometimes Lands, or as the General Domain.

Library of Congress

This plan of surveys was to some extent inaugurated in 1803 by Col. Jared Mansfield, then surveyor general of the Northwest Territory; and was subsequently enacted as a law, in 1804, upon the recommendation of President Jefferson.

The more general feature of this plan of surveys of the public domain, thus devised and covered by the enactment of Congress, provides for the establishment of principal meridians, extended north and south from an east and west base line. These are numbered from the east to the west, as the first, second, third, fourth, and fifth principal meridians; and the lands in Minnesota lying west of the Mississippi river are all described as west of the fifth principal meridian.

These principal meridians were established in the beginning, in the successive "land districts," over each of which was appointed a surveyor general, who controlled the surveys in his district, subject to such rules, regulations, and directions, as should be given him from time to time by the commissioner of the General Land Office at Washington. Hence the first principal meridian was the most easterly, in the first surveyor general's land district designated by the general government.

It is not, perhaps, strictly germane to the special subject to be presented in this paper, that I should enter into a more particular description of these principal meridians, and the points upon the east and west base lines from which they were respectively run and established. I have in this paper to deal mainly with the government survey of public lands in Minnesota lying west of the Mississippi river, which, as I have already stated, were and are described as west of the fifth principal meridian.

That a clearer understanding of these surveys may be given, it should be stated that the east and west base line from which the townships in Missouri, Iowa, and Minnesota west of the river, are numbered, passes nearly through the center of the State of Arkansas. The townships in the first tier on the north side of that line are designated as numbered one

Library of Congress

north, and each township in the first tier south of that line is designated and described as township number one south,—counting north and south from this base line.

This will answer and explain the oft repeated inquiry, what this word *north* means in describing townships in Minnesota. When, in describing land, after giving the number of the section, 59 we say, for instance, in township number 120 north, we mean it is that number north, counting from the east and west base line I have referred to.

We also say such or such a range number west, meaning west of the fifth principal meridian.

The number of townships from the base line in central Arkansas up through Missouri and Iowa to the south boundary line of Minnesota is 100; so that the north tier of townships in Iowa next to the state line is numbered 100, and the south tier of townships in Minnesota north of and next to the boundary line is numbered 101, the next 102, and so on.

The government surveys of public lands in Minnesota lying east of the Mississippi river have as their east and west base line the south boundary of the state of Wisconsin, or, to speak more accurately, the boundary line between the states of Illinois and Wisconsin. Therefore the numbering of the townships of the public surveys of lands in Minnesota lying east of the Mississippi river is entirely different from the numbering of townships west of the river. Most of the government surveys of land in Minnesota lying east of the Mississippi river were completed very early, and before the surveys of lands west of the river were made.

The two systems of surveys have no connection, except that in the northern part of our state there are lands, east of the river, which are described as being west of the fifth principal meridian.

CONVERGENCY OF MERIDIANS.

Very early in the history of the surveys of the public lands of this country, a difficulty arose because of what is now generally called "the convergency of meridians." It was found by actual measurement (which should have been known without) that these principal meridians, starting from points on an east and west base line and running therefrom on a true north course to their intersection with the Great Lakes, were, at such northern intersection, nearer one another than at the points where they started from the base line. The effect of this convergency of the principal meridians was to fractionalize the sections and townships in northern Ohio, Indiana, Michigan, Illinois, and Wisconsin, so that in those parts of these states the government surveys produced townships 60 six miles in length north and south, and less than two miles in width east and west, and sections a mile in length, north and south, by a few rods wide east and west, thus destroying the unit, the square acre, the section a mile square (640 acres), and the township six miles square, of thirty-six sections. It should be stated that this same serious effect is manifest in the surveys of the public lands in northern Iowa, the northern boundary of which is six hundred miles north of the base line in Arkansas.

An attempt to remedy this difficulty by running a series of east and west correction lines, parallel to the base lines, only corrected the difficulty to a limited extent.

In 1850 this whole matter was referred to a commission of intelligent scientific men, with Prof. Edward D. Mansfield of Cincinnati, Ohio, as chairman, who made a report to the commissioner of the General Land Office, which report was approved and adopted by that department and made the basis of instruction to the surveyor generals in the survey of the public domain thereafter.

GUIDE MERIDIANS AND STANDARD PARALLELS.

The change in the public surveys, as recommended by Mansfield and adopted by the government, was substantially as follows: That what should be known as "guide meridians" should be run north from an established east and west base line forty-two miles apart,

Library of Congress

offsetting a quarter of a mile at every twenty-four mile station on such guide meridian to provide against convergency. These guide meridians were to be intersected by what should be known as "standard parallels," east and west lines twenty-four miles apart, thus dividing the public lands into what were to be known and are known as cheques, measuring forty-two miles east and west by twenty-four miles north and south, with twenty-eight square townships in every cheque, except those made fractional and smaller by bordering on some great natural boundary, as, for instance, the Mississippi river.

The greatest care was to be observed in running the guide meridians and standard parallels. They could only be run with an astronomical instrument known as a solar compass, one of the most perfect and useful instruments ever invented for running 61 lines. Having adjusted its latitude and declination arcs, a line as perfect as the movement of the sun can be run with it; and the exact variation of the magnetic needle at any place is readily determined by it, as well as exact time.

Two sets of assistants, compassmen, chainmen, axemen and markers, were to be employed at the same time in the running of these lines, so as to guard against possible error. The variation of the needle, as shown by the solar compass, was to be carefully noted every quarter of a mile, or oftener if necessary, as a guide to the surveyors who should come after to run the township and section lines.

This new system for conducting the surveys of the public lands by the government was first inaugurated in the State of California in the autumn of 1852, and next in Minnesota west of the Mississippi river, early in the spring of 1853.

SURVEYS IN SOUTHEASTERN MINNESOTA, 1853–55.

As I had, to some extent, personal supervision and charge of that work in Minnesota in 1853, 1854, and 1855, I may be pardoned if hereafter in this paper it seems necessary to make some few references of a personal nature.

Library of Congress

Minnesota at that time was included, with Iowa and Wisconsin, in a surveyor general's district. The office of the surveyor general was at Dubuque, Iowa. Hon. Warner Lewis was surveyor general. The boundary line between Iowa and Minnesota was run and established by Capt. Andrew Talcott of the Topographical Bureau in 1852, the next year after the Indian title to lands in southern Minnesota was extinguished by treaty. It was currently reported that Captain Talcott, in running this boundary line, had with him as assistants and other employees about three hundred men. The work was not done under contract. I traversed that line from the river west a hundred and fifty miles, early in 1853. The travel of Talcott's company over the line made it like a highway then, and there were strewn along it abundant evidences that at times, at least, great hilarity must have prevailed among the men under his command.

It is but just that I should state that the preliminary line of this boundary was run by Captain Marsh of Dubuque with a solar 62 compass; and it was not changed a particle by Captain Talcott and his assistants, but was verified by them after making the most thorough scientific tests thereof.

In January, 1853, the surveyor general, Warner Lewis, gave a contract to Elisha S. Norris to run the first, second, and third guide meridians in Minnesota, west of the Mississippi river, and the first, second, third, fourth, fifth, sixth, and seventh standard parallels. The work was to be paid for by the government, ten dollars per mile for running and establishing the guide meridians, and eight dollars per mile for standard parallels. Mr. Norris had been state surveyor of Maine, and he stood high as an engineer and surveyor. He had for some years been a deputy surveyor of the surveyor general's office at Dubuque; he had made a careful study of the new plan of prosecuting government surveys which had been devised and suggested by Mansfield; and, because of this, had been selected to introduce this new system in the new Territory of Minnesota. Mr. Norris had been my preceptor, and I came with him into Minnesota as one of his assistants in this work.

Library of Congress

In the beginning of this work, in the remote southeast corner of the then Territory, Mr. Norris had the misfortune to get his solar compass out of adjustment in passing through a dense thicket, slightly bending both the declination and latitude arcs. He did not discover it until the inspector of surveys, who was following closely on the line with a solar compass and chainmen, called his attention to it and at once reported the blunder to the surveyor general's office. Mr. Norris was recalled. A great clamor, born of envy and jealousy on the part of the other deputy surveyors of the office, compelled Gen. Lewis reluctantly to relieve him, and, because of his desire to make the matter as agreeable as possible to Mr. Norris, and because of the well known partiality of the surveyor general for myself, together with political influence to a certain extent from friends (we were all simon-pure Democrats then), the supervision of these surveys was given to me, then in my seventeenth year, and I established these guide meridians and standard parallels in the years 1853 to 1855.

The first line established was not a guide meridian, strictly, but rather a line beginning on the state line, on the east side of range four, running north thereon till it intersected the Mississippi 63 river at or near where the city of La Crescent is now situated.

After completing this line, we returned and went west on the state line forty-two miles to a point between ranges ten and eleven, and thence ran the first guide meridian north between these ranges, making the required offsets every twenty-four miles. This meridian intersects the Mississippi river at the foot of lake Pepin, just a little above Read's Landing. Returning on this guide meridian to the state line, we measured west thereon forty-two miles to a point between ranges seventeen and eighteen, from whence the second meridian was run north between these ranges, making the required offsets, till it intersected the Mississippi river close above the city of Hastings. Returning again to the state line, we once more measured west thereon forty-two miles to a point between ranges 24 and 25, where the south point of the third guide meridian was established; and thence we ran it north between these ranges to its intersection with the Mississippi river near Monticello. The third guide meridian passes through the "Big Woods," crosses

Library of Congress

the Minnesota river at Belle Plaine, goes about three miles west of lake Minnetonka, and thence crosses the Crow river and Pelican lake to its intersection with the Mississippi.

So careful was the government in the establishment of these base lines, that the instructions were modified as to running the third guide meridian, requiring that it should be run during the winter season, after the large number of lakes which were supposed to be thereon were frozen solid, so that the chainmen could actually measure the line over them, and not trust to mathematical calculation from triangulation or other methods of determining distances across impassable places. I was engaged in establishing this meridian nearly five months, from some time in November, 1853, to some time in April, 1854. I ran the standard parallels intersecting these guide meridians. Afterward I did some township and section work, and terminated my connection with the surveyor general's office at Dubuque, January 1, 1856, at which time I came to Winona, where I have ever since resided.

The plan of the government surveys of the public domain devised by Mansfield has to a very great extent answered the purpose intended. The sections and townships in Minnesota, west of the Mississippi river, were not fractionalized by the convergency of meridians; and I am also told that this is true of the survey of 64 public lands by the government in California and elsewhere in the Union, where from that time this plan has been followed in the survey of all public lands held by the government.

Perhaps it would not be out of place, in closing this paper, to make some reference to a few incidents of more or less historic interest which I met with at the time of making these early government surveys, and to refer to my acquaintance at that time with some of the earliest pioneers of Minnesota.

CASTLE ROCK AND THE ZUMBRO RIVER.

In running a line some distance southwest of Hastings one very bright summer day, we came upon a white sandstone pillar on the smooth open prairie. It was quite high

Library of Congress

and impressed us as peculiar, being in that locality without any other similar formation near it, glistening in the bright sunlight. Some of my company clambered up this natural obelisk far enough to find cut in the sandstone the name of Nicollet and the date 1837. The government had furnished me with copies of Nicollet's maps of the survey he had made in this country, and we examined them and found this pillar of white sandstone indicated thereon. That Nicollet had carved his name there in 1837, I have for good reasons doubted; but that he visited and took note of what is now known as Castle Rock, there cannot be a shadow of a doubt.

I want to bear testimony to the wonderful fidelity and accuracy of this savant and explorer in marking the topography of this section of the country as shown in his maps. The main streams and water courses of southern Minnesota were most accurately indicated by him on his topographical maps, copies of which I had.

A somewhat curious and interesting etymological result grew out of the name given by the early French voyageurs, and thence by Nicollet, to the water courses, streams, and river, which drain the counties of Dodge, Olmsted, and Wabasha, now known as Zumbro river. The French name was Rivière aux (or des) Embarras, referring to the difficulties (embarrassments) of navigating it with canoes. This river, which flows east through Wabasha county was named "Des Embarras river" by Nicollet, and this was followed by me in the report of the survey of guide meridians and standard parallels which crossed this river and its tributaries. 65 Hence Des Embarras was the name given to this river upon all the early maps of Minnesota. Its Sioux name was Wazi-oju, meaning "the pine place," for the white pine trees which occur sparingly on its bluffs. When English-speaking people settled the lands bordering on this stream, they adopted the French name, but found it difficult to give the French pronunciation. After many unsuccessful efforts, it finally resulted in the name Zumbro for this stream and its tributaries.

THE WINNEBAGO INDIANS.

Library of Congress

Before starting out to run the third guide meridian, I was advised that if the line passed through or near the place where the Winnebago Indians were located, I and my men might have trouble, as these Indians were greatly dissatisfied about something; and I was assured by the Department that a messenger should be sent from Fort Snelling to apprise me of the exact state of affairs with the Winnebago Indians, and if there was danger I should abandon the line. No messenger ever came, or, if he did come, he failed to find me; so the alarm and fear of my men and myself, eighteen in all, can readily be imagined, when we reached a place on the line where the snow was all tramped down, unmistakable evidence of human beings in the vicinity. It was late in the afternoon and in a dense forest, and, if my recollection is right, it was on the Crow river. I set my compass, and my men came up and we stood for a few minutes in consultation, when out from behind a tree near us, came an Indian, gun in hand, white blanket on, and otherwise comfortably well dressed. He spoke to us, saying, "How do you do?" Soon other Indians came out from behind the trees, and then others, in such numbers that we were ready to believe, literally, that "the woods were full of them." They were wonderfully interested in my compass and surveying outfit, the chain, the tally pins, etc. They told us, as best they could, that, hearing the noise we made coming up through the woods, they took us for an attacking party of Indians, but they were glad to know we were white men.

I asked who they were, and they said, "Winnebagoes," and that Winneshiek, their chief, was farther down. We camped, and, taking one of my men with me and after passing through a most awful cordon of yelping dogs, I called on Winneshiek that 5 66 evening. Whether this was a title or a name I knew not, but he received us kindly, speaking in fair English. He complained bitterly of his treatment by the Indian commissioners and other government officials, who, he said, had either deposed or wanted to depose him, and to get another chief to give away his lands. I assured him that I had nothing to do with such matters, and joined him heartily in his righteous indignation at the manner he was being outraged. He not only made us no trouble, but next morning, when we passed through on the line, three rods west of his tepee, he gave us a large quantity of fine venison for a

Library of Congress

reasonable compensation. I was led to believe that this was a large band of Winnebagoes hunting off their reservation.

PERSONAL REMINISCENCES.

In the autumn of 1854, I met at Mendota Captain Tilton and Major Reno, who had just completed the survey of a military road from Sioux City to Fort Snelling. Major Reno was greatly interested in my solar compass, and asked me if he could bring around the next day, to see this instrument, Capt. George B. McClellan, who had just come from the west to consult Gov. Isaac I. Stevens in regard to the Northern Pacific Railroad surveys. They came the following day, and, of course, I "spread myself" in explaining the use and merits of the solar compass to these distinguished West Pointers. I recall that Reno said it was a shame that this instrument had not been introduced for use in the army engineering, and the only reason he could give was, that it had not been invented by an army officer.

While making these surveys, I met a few of the early pioneers, notably General Sibley, who laid me under great obligations for much kindness and consideration, and Joseph R. Brown, at whose hospitable home, at Henderson, I was entertained four weeks while waiting for instructions. I was greatly impressed with Joseph R. Brown in many ways. I recall now quite vividly the impression I had then, that he was the smartest man I had ever met.

I also made the acquaintance of Henry M. Rice, Alexander Faribault, and Alexis Bailly. I think I met Martin McLeod. I met Governor Gorman and many others, all of whom I remember most kindly. They all did what they could for me. For some reason unknown, I had not the good fortune during this time to meet the most illustrious of all these, Governor Ramsey. Minnesota was and is greatly indebted to its earliest pioneers. Many of them were men of culture and refinement, all of them strong men, brave, hospitable,

Library of Congress

courteous, and kind. What a welcome they gave all those who came to make a home in this beautiful land and glorious commonwealth!